Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Graphene/N-doped Carbon Sandwiched Nanosheets with Ultrahigh Nitrogen Doping for Boosting Lithium-Ion Battery

Xianghong Liu[a,*], Jun Zhang[a,b], Shaojun Guo[c,*], Nicola Pinna[d]

[a]College of Physics, Qingdao University, Qingdao 266071, China
[b]School of Materials Science and Engineering, University of Jinan, Jinan 250022, China
[c]Department of Materials Science and Engineering, & Department of Energy and Resources Engineering, College of Engineering, Peking University, Beijing 100871, P.R. China.
[d]Institut für Chemie, Humboldt-Universität zu Berlin, Brook-Taylor-Str. 2, 12489 Berlin, Germany

Table S1. Elemental composition of Ppy/GO (polypyrrole coated graphene oxide), N-carbon/rGO (N-doped carbon/reduced graphene oxide) obtained from pyrolysis of Ppy/GO, and N-carbon derived from pyrolysis of polypyrrole.

Materials	Elemental composition (wt.%)		
	N	C	H
Ppy/GO	15.3	54.9	3.7
N-carbon/rGO	15.5	74.5	1.6
N-carbon	15.7	73.2	1.3

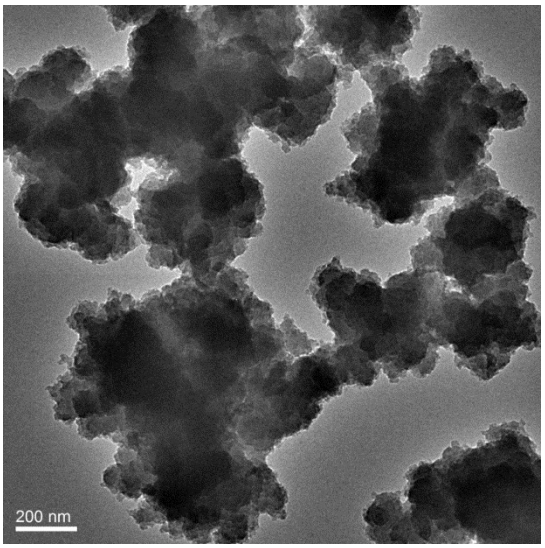

Figure S1. TEM of Ppy synthesized without using GO, showing an irregular morphology consisted of aggregated particles.

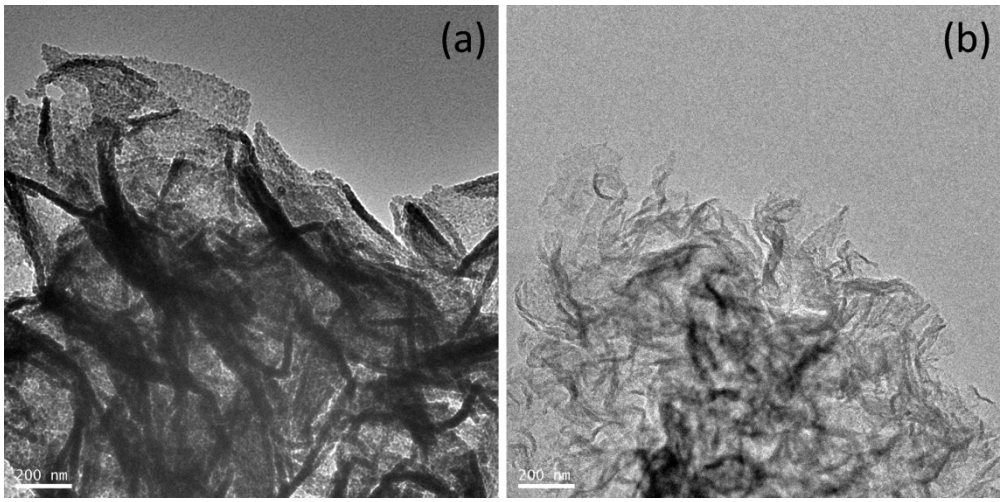

Figure S2. Overall TEM of (a) Ppy/GO and (b) N-carbon/rGO nanosheets.

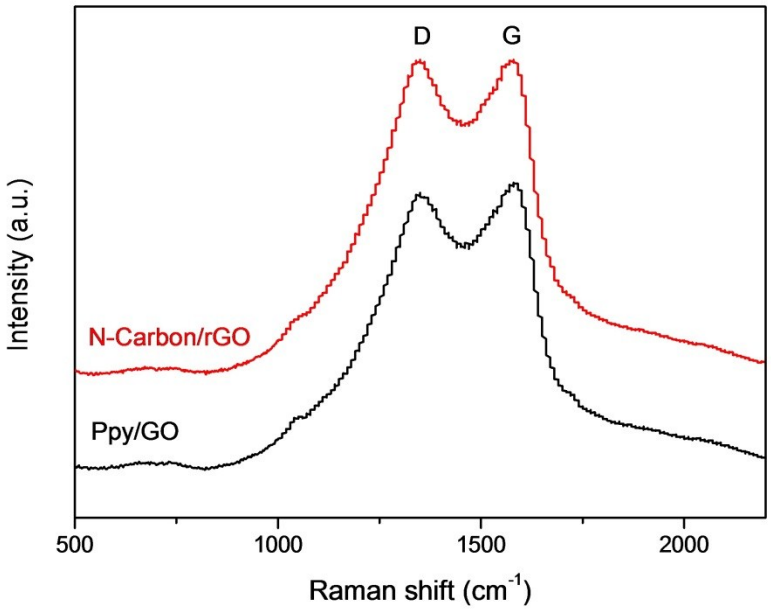

Figure S3. Raman spectra of N-carbon/rGO and Ppy/GO

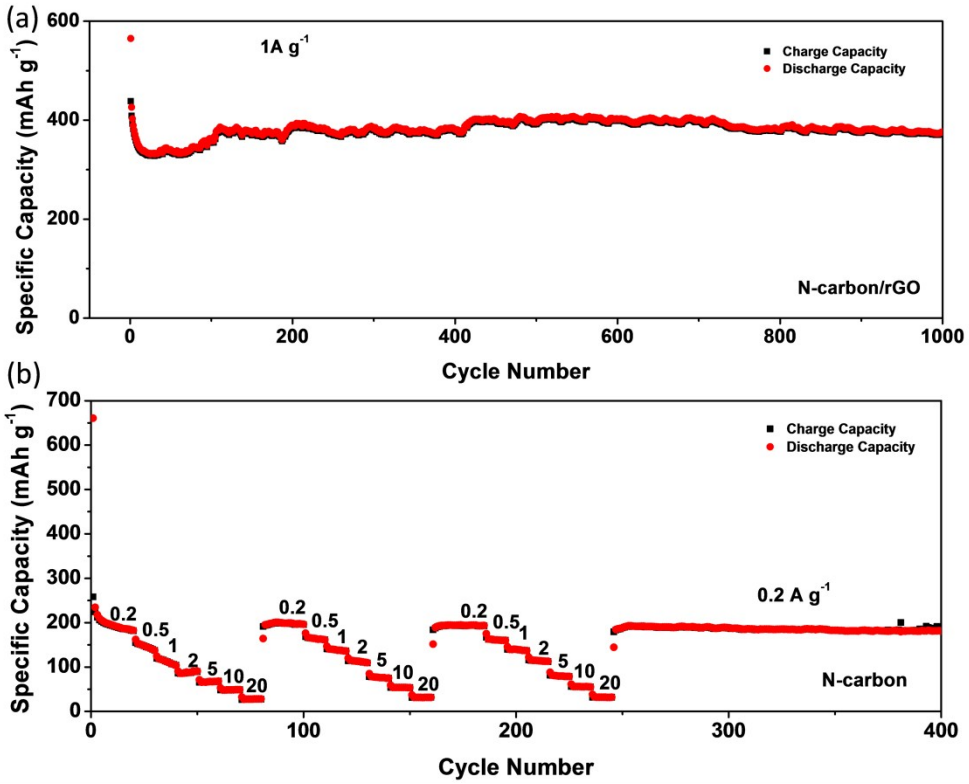

Figure S4. (a) Cycling performance of N-carbon/rGO nanosheets at a high current density of 1 A g^{-1} and (b) rate capability of N-carbon.